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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/521,639	09/06/2005	Symon D'Oyly Cotton	142.018US01	2648
34206 7590 08/07/2008 FOGG & POWERS LLC 10 SOUTH FIFTH STREET SUITE 1000 MINNEAPOLIS, MN 55402				
EXAMINER ABRAHAM, SALLEU M				
ART UNIT 3768		PAPER NUMBER		
NOTIFICATION DATE 08/07/2008		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@fogglaw.com

Office Action Summary

Application No.

10/521,639

Applicant(s)

COTTON, SYMON D'OYLY

Examiner

SALIEU M. ABRAHAM

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date 1/19/2005
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 103(a) that form the basis for the rejections under this section made in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 - 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pub. No. 2001/0056237 to Cane (**Cane**) in view of US Pat. No. 4,170,987 to Anselmo (**Anselmo**).

In Reference to Claims 1, 10 and 15

Cane teaches parallel apparatus and methods for monitoring the presence of selected chromophores in a sample of epithelial tissue, independent of the amount of a predetermined chromophore via an area of tissue by projecting light from a light source of at least two different wavelengths and making measurements on the light received from the illuminated area of tissue (**see abstract, figures 1-2 and 14, and section [0031]**). However, while Cane does disclose a mathematical model and formulation "for the analysis and comparison of the remitted light with a reference sample", he does not disclose deriving a ratio metric (**applicant's Z**) obtained from received light

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measurements (**applicant's R_{λ}**) for each wavelength such that Z "is independent of the amount of predetermined chromophore."

Anselmo, in a related application for a skin diagnosis system, discloses substantially equivalent apparatus and methods along with formulation that does employ obtaining a ratio metric (**applicant's Z**) obtained from received light measurements (**applicant's R_{λ}**) for each wavelength such that the ratio metric Z "is independent of the amount of predetermined chromophore" (see abstract, figures 1- 2, column 3, lines 18 – 57, and claims 1 - 5). He discloses that the invention's benefit providing an easily identifiable (i.e. visual image/display) output that can be used in to facilitate the diagnoses of skin and other tissue "conditions or changes" in their characteristics (see column 9, lines 20 - 30 and claims 1- 3, 11 and 12 -15).

Therefore , it would have been obvious to one ordinary skill in the art at the time of the invention to have included a ratio metric as employed by Anselmo in the invention of Cane in order to aid in diagnosing the condition of skin as taught by Anselmo.

In Reference to Claims 2 - 9

Cane in view of Anselmo has been shown to teach all limitations for claim 1. Cane in view of Anselmo further teaches a method for monitoring the presence of selected chromophores in a sample of epithelial tissue, independent of the amount of a predetermined chromophore:

(Re claim 2): in which a received light measure (**applicant's R**) is calculated by

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analyzing the received light to identify and measure the proportion of light of each wavelength remitted from the tissue (**applicant's I**) ; and calculating the ratio of light at each wavelength returned from the tissue (**see Anselmo abstract, and claims 2 -3 and 13 - 14**);

(Re claim 3): in which the absorption coefficients for the predetermined chromophore at each wavelength are factored into the calculation of the ratio metric/Z; (**see Anselmo abstract, and column 1, lines 14 - 28 and claims 1 and 4-7**)

(Re claims 4 - 6): in which the predetermined chromophore may be melanin or hemoglobin and the epithelial tissue is skin ; (**see Cane abstract and sections [0009 and 0046]**)

(Re claims 7 - 9): in which the at least two wavelengths for skin illumination are separated by 200 nm, fall substantially in the red (625 – 740 nm) and near infra red (780 – 1000 nm) spectra respectively and the collagen level causes negligible absorption at one illuminating wavelength and large absorption at the other. (**see Anselmo abstract and claims 1-3**)

Therefore, Cane in view of Anselmo teaches all limitations for claims 2 - 9.

In Reference to Claims 11 - 14

Cane in view of Anselmo has been shown to teach all limitations for claim 10. Cane in view of Anselmo further teaches a method of forming an image of an area of epithelial tissue independent of the amount of a predetermined chromophore in the tissue :

(Re claim 11): in which a received light measure (**applicant's R**) is calculated by analyzing the received light to identify and measure the proportion of light of each wavelength remitted from the tissue (**applicant's I**) ; and calculating the ratio of light at each wavelength returned from the tissue (**see Anselmo abstract, and claims 2 - 3 and 13 - 14**);

(Re claim 12): see claim 3 rejection supra.

(Re claim 13): in which the at least two sets of calculations for the ratio metric/Z are carried out at first and second respective calculations such that Z is independent of the amount of respective first and second predetermined chromophores (**see Anselmo abstract, and claims 2 - 6, 9 and 13 - 14**);

(Re claim 14):): in which the light source used to illuminate the tissue, is of at least three wavelengths, and at least three pairs of calculations of the ratio metric/Z are made such that Z is independent of the amount of the predetermined chromophore for the respective pair of wavelengths (**see Anselmo abstract, and claims 2 - 6, 9 and 13 -**

14);

Therefore, Cane in view of Anselmo teaches all limitations for claims 11 - 14.

In Reference to Claim 16

Cane in view of Anselmo has been shown to teach all limitations for claim 15. Cane in view of Anselmo further teaches an apparatus for monitoring the presence of selected chromophores in a sample of epithelial tissue, independent of the amount of a predetermined chromophore also comprising image creation means for receiving a plurality of values of a ratio metric/Z, each for a specified location on the tissue, and providing a mapped image representing the value of the ratio metric/Z at the plurality of locations on the tissue. (see **Anselmo abstract, and claims 13 - 15**)

Therefore, Cane in view of Anselmo teaches all limitations for claim 16.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Cabib et al., Chance, Farahi et al., Fiesler et al., Grenier et al., Gutkowicz-Krusin et al., Hein et al., Jacques et al., Lemelson, Leonardi et al., St-Jean et al., and Wang et al. have been included because they all teach the use apparatus and methods for tissue condition diagnosis/characterization, to include skin, similar to applicant's proposed invention.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Salieu M. Abraham whose telephone number is (571) 270-1990. The examiner can normally be reached on Monday through Thursday 9:30 am - 7:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on (571) 272-4740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

7/18/08 SA

/Brian L Casler/
Supervisory Patent Examiner, Art
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